

**EFFICIENT TRANSACTIONAL MESSAGING BETWEEN
LOOSELY COUPLED CLIENT AND SERVER OVER MULTIPLE
INTERMITTENT NETWORKS WITH POLICY BASED ROUTING**

ABSTRACT OF THE DISCLOSURE

5 The KonaWare Framework is a collection of software components that provide bi-directional transactions between wireless/mobile devices and enterprise server applications. Transactions are achieved between client and server by breaking up the sequence such that the client does not have to wait until the transaction is completed before relinquishing the network connection. By using asynchronous messaging, the

10 message is persisted at every step and can be handed off to the next stage without waiting. The reply from the server comes back to the client as an asynchronous message and completes the transaction. Bi-directional messaging is achieved using server-initiated push techniques such as modem signaling, http listener, SMS or polling using an efficient decaying algorithm. Messages are sent via communication channels that can be a

15 combination of a physical network and a service provider. Networks are automatically detected by observing changes in the TCP/IP route table and configured by altering the default route. Service providers are determined by using identification servers accessible only in specific networks; if reachable, then it is that network. Transmission rules are formed using regular expressions to combine system, message and channel parameters.

20 These are changed at any time and sent dynamically as system messages to target devices. Loosely coupled client-server applications are developed without coding by declarative programming using relating business objects and graphical objects and mapping them into messages using properties sheets. Conflict-free database synchronization is achieved by assigning a master database and making the others slave

25 databases whose updates are considered pending until confirmed by the master database. A lightweight LUCID (Logic Up, Consistent Information Down) model works by sending acknowledgement messages instead of the entire reply record.